July 25, 1933. R. H. JEWELL 1,919,467

AMUSEMENT APPARATUS

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FIG. 1.

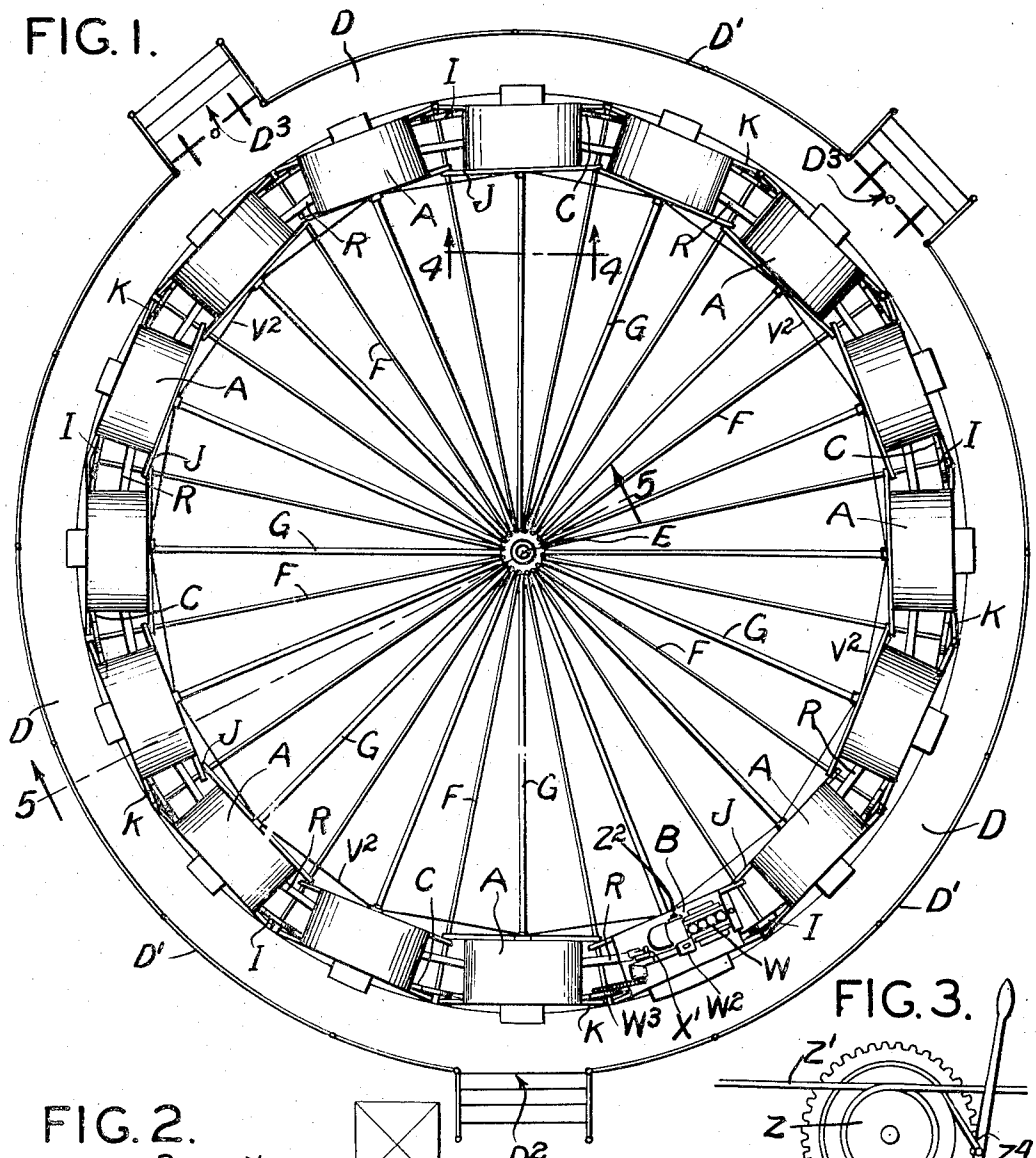


FIG. 2.

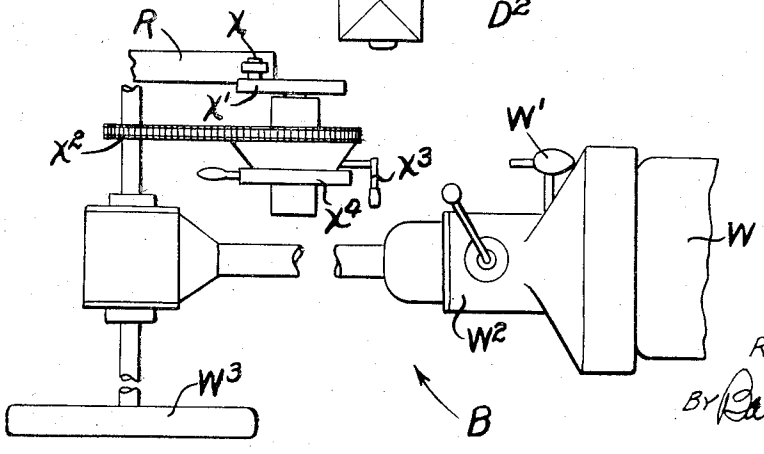
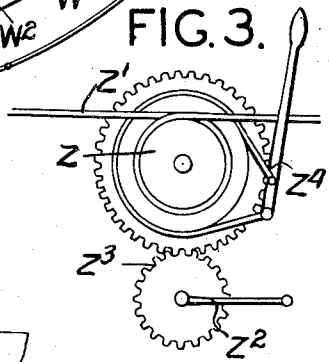


FIG. 3.



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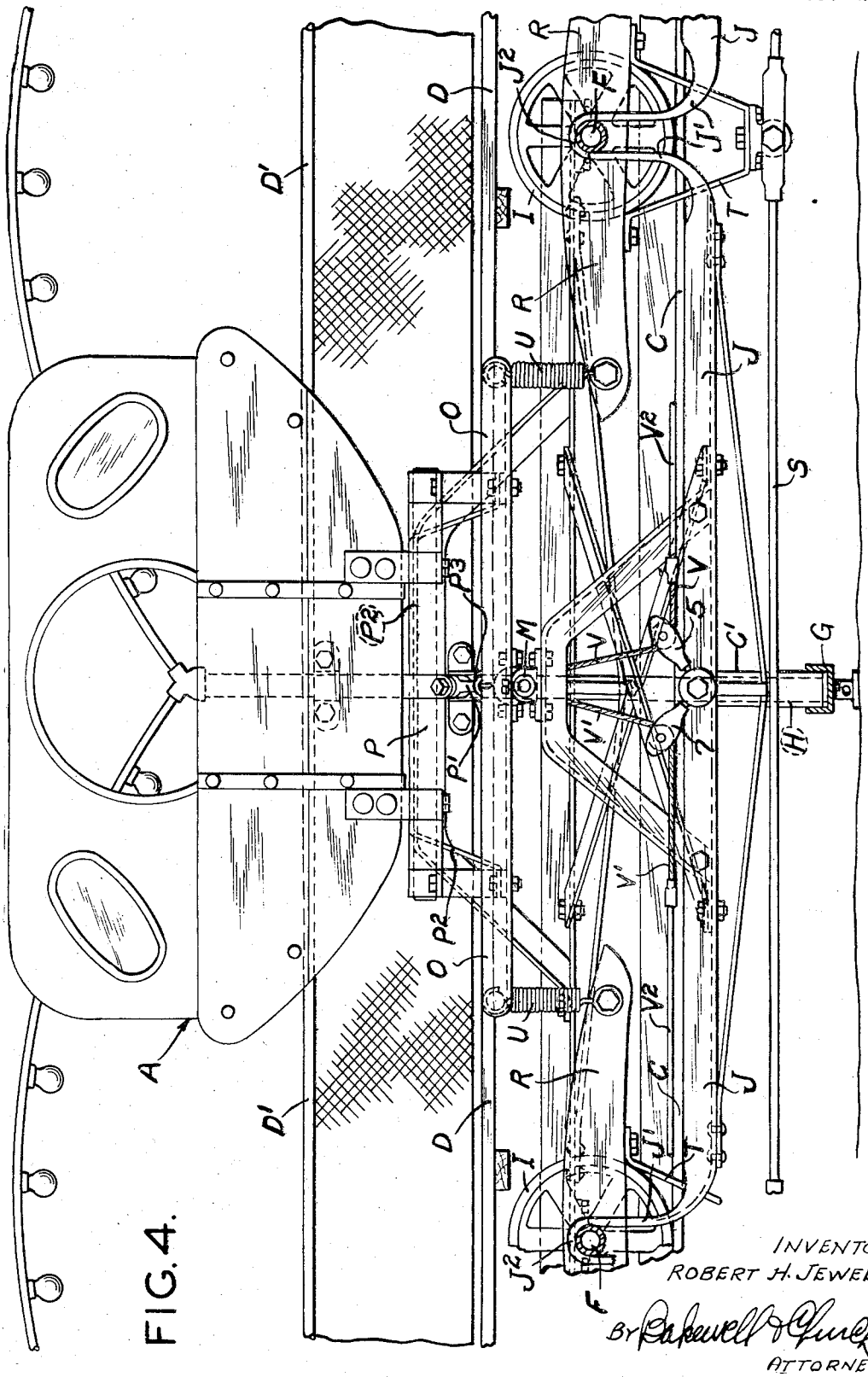

FIG. 4.

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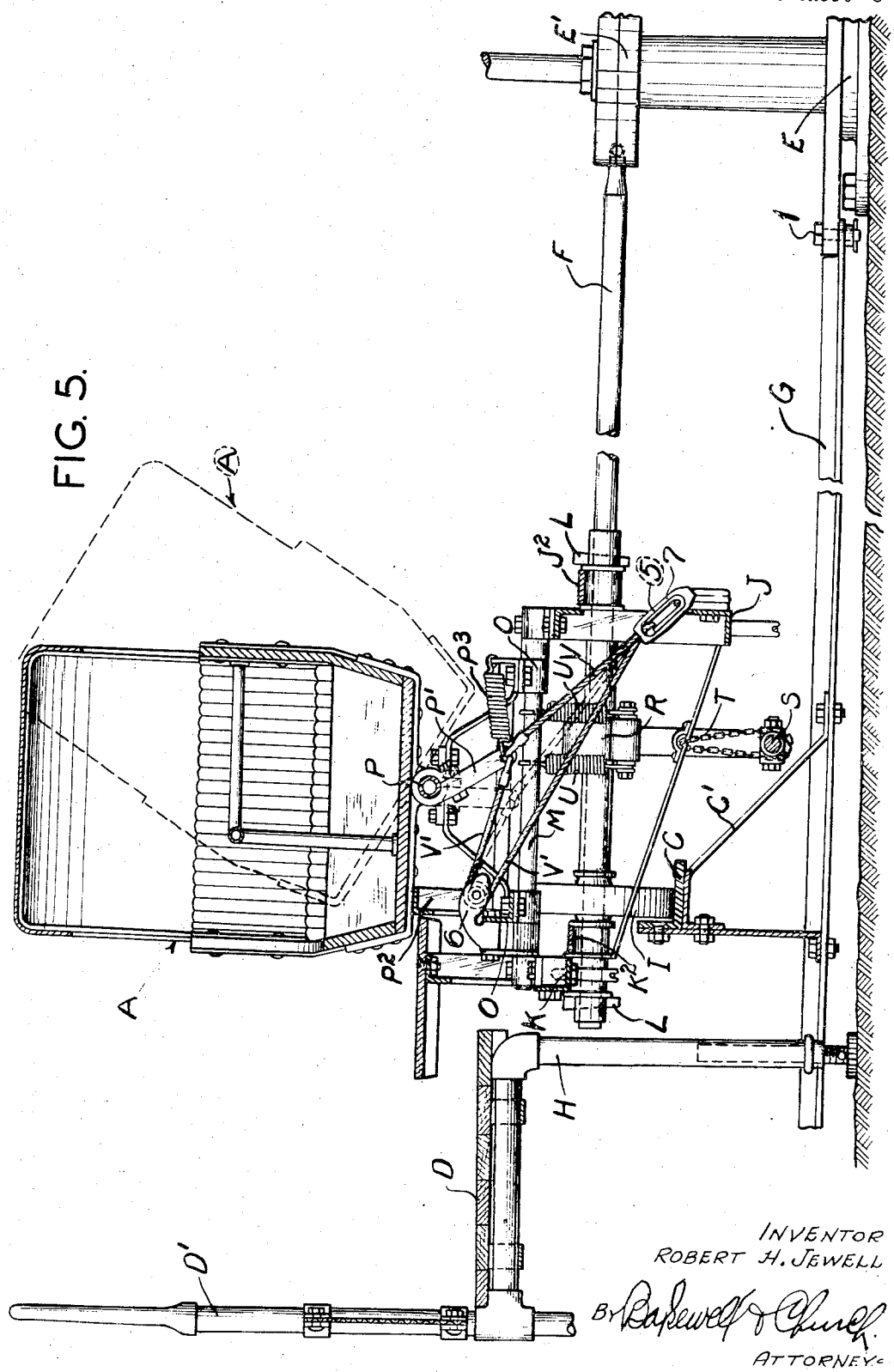
FIG. 5.



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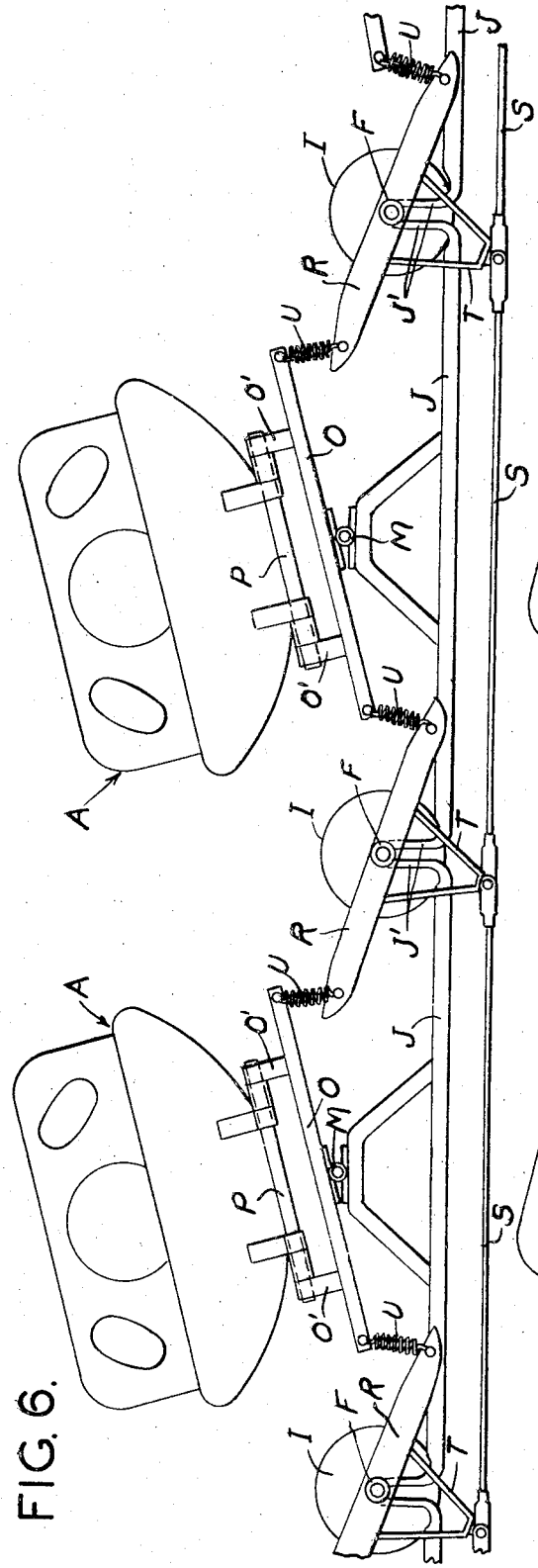

FIG. 6.

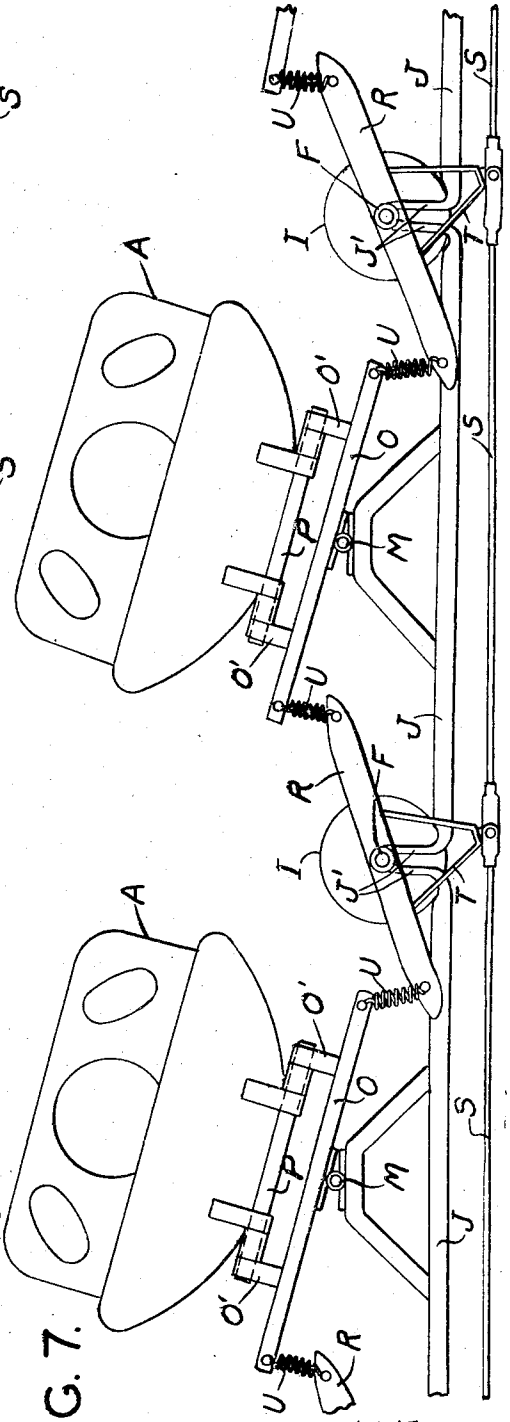

FIG. 7.

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Patented July 25, 1933 1,919,467

UNITED STATES PATENT OFFICE

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AMUSEMENT APPARATUS

Application filed September 2, 1931. Serial No. 560,696.

This invention relates to amusement devices of the general type commonly referred to as merry-go-rounds, carousels and roundabouts, which consist of a plurality of passenger carrying devices or vehicles arranged to travel in a circular path.

The main object of my invention is to provide an amusement apparatus of the general type mentioned that will produce an effect or sensation on the passengers practically the same as is produced by an aeroplane in flight, notwithstanding the fact that the passenger carrying cars or vehicles travel on a stationary track.

Another object is to provide an inexpensive apparatus of simple construction, by which a large number of persons can obtain the sensation of an aeroplane ride, and which is of such design that the operator in charge of the apparatus is in sole control of the mechanism that is used to rock the cars fore and aft to produce the sensation of flying through bumpy air, and the mechanism that is used to tilt the cars transversely so as to produce the sensation of banking on a turn.

And still another object of my invention is to provide an amusement apparatus of the particular kind above described, which does not require either a track of complicated design or construction, or an external power plant and complicated gearing and power transmitting devices for rocking the cars and causing them to travel in a circular path. Other objects and desirable features of my invention will be hereinafter described.

Figure 1 of the drawings is a top plan view of my improved apparatus.

Figure 2 is a top plan view of the mechanism by which the operator in charge of the apparatus can cause the cars to rock fore and aft, or rock upwardly and downwardly.

Figure 3 is a side elevational view of the mechanism by which the operator can cause the cars to tilt transversely so as to simulate the effect that is obtained when an aeroplane is banked.

Figure 4 is an enlarged side elevational view of one of the cars and its operating mechanism, taken on approximately the line 4—4 of Figure 1, looking in the direction indicated by the arrow.

Figure 5 is an enlarged transverse sectional view, taken on the line 5—5 of Figure 1, looking in the direction indicated by the arrow; and

Figures 6 and 7 are diagrammatic views, illustrating the action of the mechanism used to rock the cars fore and aft.

My improved apparatus is composed of a plurality of passenger carrying cars or vehicles A, coupled together and arranged so as to form a circular train that comprises a driving unit B, a circular track C on which said train travels and a circular elevated platform D surrounding said track and provided with an enclosing rail D'. As is usual in devices of this character, the platform D is provided with an entrance D^2 and a plurality of exits D^3. The cars A, which are identical, may be of any preferred construction or design, and they are combined with mechanisms by which the operator in charge of the apparatus can rock the cars fore and aft, as indicated in Figures 6 and 7, so as to produce the senation of flying through bumpy air, and can tilt the cars transversely, as indicated in broken lines in Figure 5, so as to produce the sensation which the occupant of an aeroplane receives when the plane is banked. The particular way that the cars are mounted and the particular mechanism that is used to rock and tilt the cars are immaterial, so long as the operating mechanisms are of such construction that the operator has sole control of the cars, both as to the speed at which they travel and the motion to which the cars are subjected when the apparatus is in use.

As shown in the drawings, the apparatus comprises a stationary center post E which carries a turn-table or rotatable element E' from which axles F project radially and terminate at a point above and beyond the circular track C, as shown more clearly in Figure 5. The track C, which is of circular shape or form, is preferably of angle shape in cross section and is flat, level or free from waves or undulations. It is carried by brackets C' that project upwardly from ra-

dially-disposed members G whose inner ends are detachably connected by fastening devices 1 to a part carried by the center post E, and whose outer ends have mounted thereon uprights H that carry the platform D, previously referred to. Loosely mounted on each of the axles F, adjacent the outer end of same, is a wheel I (see Figure 5) which travels on the track C, and the respective axles are tied together and maintained in spaced relationship by links and tie bars that constitute in effect a wheel felloe whose spokes are formed by the axles F and whose hub is formed by the center turn-table E. Hence, when power is applied to the driving unit B, the circular train composed of the cars A and the driving unit B, will travel in a circular path around the track C.

In the apparatus herein illustrated each car A is arranged between two axles F, and as previously explained, is mounted so that it can rock fore and aft (upwardly and downwardly) about a horizontal axis disposed transversely of the car, and can also tilt transversely about a horizontal axis disposed longitudinally of the car. The two axles F between which the car is positioned are tied together by links J and K arranged at the inner side and at the outer side of the car, respectively. The inside link J (see Figure 4) is provided at its ends with upwardly-projecting arms J′ that have hook-shaped portions J² at their upper ends which lap over the axles F, and the outer link K, which is arranged in a higher horizontal plane than the inner link J, is provided at its ends with substantially hook-shaped portions that are adapted to embrace or lap over the axles between which said link is positioned. The links J and K practically form the side members of the supporting frame for the car, and in view of the fact that they can be combined in proper relationship with the axles F simply by slipping the hook-shaped portions on said links over the axles, the apparatus can be quickly assembled and disassembled. As shown in Figure 1, the side frame members or links J and K, which are associated with one car engage at one end the same axle that sustains one end of the links or side frame members J and K of an adjacent car, the end portions of the links of adjacent cars being arranged in overlapping relationship and held against movement longitudinally of the axles by removable wedges or pins L positioned in the axles. The links or side frame members J and K carry bearings in which is mounted a horizontal rock shaft M that is disposed transversely of the car at a point some distance below the floor of the car, as shown in Figure 5. Said rock shaft M has rigidly attached to same a tilting platform O that rocks fore and aft (upwardly and downwardly) and which is provided with bearings O′ that receive a longitudinally-disposed shaft P which is rigidly attached in any preferred or suitable manner to the body of the car. Consequently, the car is capable of tilting transversely or sidewise about a horizontal axis that extends longitudinally of the car (the shaft P) and it is also capable of rocking upwardly and downwardly about a horizontal axis that extends transversely of the car (the shaft M).

Two separate and distinct mechanisms are provided for rocking the cars A fore and aft and for tilting said cars transversely. The fore and aft rocking mechanism is preferably composed of walking beams R rockably mounted on the axles F and operatively connected in any suitable way to the platforms O, tie rods S pivotally attached to arms T that project downwardly from the walking beams R, and a power driven element on the driving unit B which the operator can set in motion so as to cause all of the walking beams R to rock upwardly and downwardly, it being noted that the tie rods S join all of the walking beams R together so that if rocking movement is imparted to one of the walking beams, all of the other walking beams will partake of the same movement. In the apparatus herein illustrated each walking beam R is interposed between two of the tilting platforms O and the opposite ends of said walking beam are joined to or coupled with said platform by means of coiled springs U. If desired, said springs may be connected with the platforms or walking beams in such a way that the platform associated with any particular car can easily be disconnected from the mechanism that is used to rock the cars.

The mechanism that is used to tilt the cars A transversely or sidewise, consists of a flexible operating device, such as a cable or a rope, attached to depending arms P′ on the longitudinally-disposed shafts P of the respective cars A in such a way that when said operating device is pulled or moved in one direction, all of the cars will tilt transversely inwardly towards the center post E, and when said operating device is pulled or moved in the reverse direction, all of the cars A will move back to or towards their normal upright position (shown in full lines in Figure 5). By varying the movement imparted to said operating device the cars can be tilted more or less and can be maintained in a tilted position, so long as the operator desires and irrespective of the speed at which the train of cars is traveling. In the form of my invention herein illustrated, the depending arm P′ on the longitudinally-disposed shaft P of each car has attached to same a cable V that leads through a pulley 5 fastened to the inner side frame member J. A similar cable V′, which is attached to the depending arm P′, leads through a pulley

6 attached to the outer side frame member K, and thence through a pulley 7 attached to the inner side frame member J. When the cable V' is pulled to the left, looking at Figure 4, the car A will be tilted inwardly, as shown in broken lines in Figure 5, more or less, depending upon the degree of movement of the cable V', and when the cable V is pulled to the right, looking at Figure 4, the car will be moved in the reverse direction towards its former position. Normally, the car is maintained in an upright position in contact with a stationary supporting bearing P^2 carried by the tilting platform O on which the car is mounted, this effect or result being attained by arranging the longitudinally-disposed shaft P slightly off center or at one side of the longitudinal axis of the car and also by attaching the lower end of the arm P' to a spring P^3 which exerts pressure on said arm in a direction tending to hold the car in a level position in contact with the supporting bearing P^2. The left hand cable V', shown in Figure 4, that is used to tilt the car inwardly, is joined by a link or tie bar V^2 to the right hand cable V of the adjacent car to the left, and likewise, the right hand cable V of the car shown in Figure 4 is connected by the tie rod V^2 to the left hand cable V' of the adjacent car to the right, thereby forming in effect a continuous flexible operating device that is attached to all of the cars in such a way that all of the cars will move in unison, and in the same direction, when the operating device is actuated to tilt or restore the cars.

It is immaterial, so far as my broad idea is concerned, what the driving unit B consists of, but it preferably consists of a car positioned between two of the axles F and provided with an internal combustion engine W and a clutch W' and change speed gearing W^2 by which the operator in charge of the apparatus can transmit movement from the engine W to a drive wheel or traction wheel W^3 that travels on the track C, the parts above referred to being shown more or less diagrammatically in Figure 2. The driving element previously mentioned that is used to actuate the walking beams R, is illustrated in Figure 2 as consisting of an eccentrically-disposed pin X on a driven member X' that is combined with one of the walking beams R in such a way that when said driven member X' is in rotation, all of the walking beams R will rock upwardly and downwardly, and thus rock the cars A fore and aft. A power take-off X^2 of any preferred type or kind may be used to drive the member X' from the drive shaft of the engine or from the shaft to which the traction wheel or drive wheel W^3 is attached, and a clutch, designated by the reference character X^3 is provided so as to enable the operator to throw the driving member X' into and out of service. The mechanism also preferably comprises a brake X^4 which the operator can actuate to hold the driving member X' and the series of walking beams at rest, or can actuate to release the driving member X' when it is desired to have said driving member rotate so as to rock the cars A upwardly and downwardly. When the brake X^4 is set and the clutch X^3 disengaged, the cars A will be held against movement fore and aft, or, in other words, will be prevented from rocking on the shafts M, even though the train is in motion. The mechanism that is used to actuate the flexible operating device that is employed to tilt the cars transversely, and which previously was described as consisting of cables V and V' joined together by tie rods V^2, is illustrated in Figure 3 as consisting of a drum Z having wound thereon a cable Z' that forms part of said flexible operating device. By rotating said drum in one direction said flexible operating device will be moved in a direction to tilt the cars A inwardly, and by rotating the drum Z in the opposite direction, the cars will be restored or moved back towards their normal upright position. The drum is rotated by means of a hand crank Z^2 connected by a gearing Z^3 with the drum, and a brake Z^4 is provided for locking the drum Z or holding it against movement. When said drum is locked the cars A will be securely held against transverse tilting movement, due, of course, to the fact that the flexible operating device which is wound around the drum, is also attached to all of the cars and maintained in a taut condition. Obviously, my invention is not limited to the particular type or kind of mechanisms herein illustrated for rocking the walking beams R and for imparting a transverse tilting movement to the cars A, as it is immaterial what type or kind of means is used for this purpose, so long as said means is of such a character that the operator in charge of the apparatus, and he alone, can set the walking beams in operation or cause them to cease operating and can tilt the cars more or less into an inwardly inclined position so as to produce the sensation which the occupants of an aeroplane receive when the plane is banked in turning.

My improved apparatus is inexpensive to construct, it is of such simple design that it can be readily assembled or disassembled, and it has a large seating capacity. It has the added advantage that the cars of same travel on a level or flat track and it does not require an external power plant connected with complicated gearing or power transmitting mechanism for imparting movement to the cars.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An amusement apparatus, composed of a circular track, a circular train of rockable cars on said track comprising a power unit

provided with a power-producing device that imparts movement to the train, mechanism under control of the operator by which said power-producing device can be used to rock the cars fore and aft when the train is in motion, and an independent mechanism under control of the operator for tilting the cars transversely.

2. An amusement apparatus, comprising a circular, level track, radially-disposed axles provided with wheels that travel on said track, rockable passenger cars carried by said wheels, a driving unit coupled with said cars so as to form a train, said driving unit being provided with a power-producing device, a mechanism for rocking said cars upwardly and downwardly about horizontal axes that are disposed transversely of the cars, and means for enabling said rocking mechanism to be coupled with or disconnected from a power-producing device on said driving unit.

3. In an amusement apparatus of the kind described, a passenger carrying car adapted to travel on a track, a supporting structure for said car comprising a tilting platform that rocks on an axis disposed transversely of the car, and means for mounting the car on said platform in such a way that the car can tilt on an axis disposed longitudinally of the platform.

4. In an amusement apparatus of the kind described, a train of cars comprising a driving unit that propels the cars, said cars being mounted so that they can rock fore and aft, and an operating mechanism actuated from said power unit for rocking said cars fore and aft, said operating mechanism comprising a series of walking beams directly connected together.

5. In an amusement apparatus of the kind described, a circular track, a center turn-table or rotatable element, radially-disposed axles connected to said turn-table and provided with wheels that travel on said track, a frame structure carried by said axles, tilting platforms carried by said frame structure, mechanism for rocking said platforms, and passenger carrying cars mounted on said platforms.

6. In an amusement apparatus of the kind described, a circular track, a center turn-table or rotatable element, radially-disposed axles connected to said turn-table and provided with wheels that travel on said track, a frame structure carried by said axles, tilting platforms carried by said frame structure, mechanism for rocking said platforms, passenger carrying cars mounted on said platforms, and means for enabling the cars to be rocked or tilted transversely of the platforms.

7. In an amusement apparatus of the kind described, a circular track, a center turn-table or rotatable element, radially-disposed axles connected to said turn-table and provided with wheels that travel on said track, a frame structure carried by said axles, tilting platforms carried by said frame structure, walking beams mounted on said axles and operatively connected with said platforms, and passenger carrying cars mounted on said platform.

8. An amusement apparatus, comprising a circular, level track, a center turn-table or rotatable element, radially-disposed axles connected to said turn-table and provided with wheels that travel on said track, a frame structure carried by said axles, a driving unit provided with means for propelling the frame structure around said track, passenger carrying cars carried by said frame structure and mounted so as to be capable of rocking or tilting in two directions at approximately right angles to each other, an operating mechanism adapted to be actuated by said power unit for rocking the cars fore and aft, and an independent mechanism under control of the operator in charge of the power unit for tilting the cars transversely, relatively to their path of movement, so as to simulate banking.

9. An amusement apparatus of the kind described, comprising a circular track, a center turn-table or rotatable element, radially-disposed axles connected to said turn-table and provided with wheels that travel on said track, a frame structure comprising frame members arranged between the axles and provided at their ends with substantially hook-shaped portions that are adapted to be slipped over the axles so as to support the frame structure on the axles and hold the axles in spaced relationship, tilting platforms on said frame structure whose axes are disposed transversely of the track, an operating mechanism for said platforms comprising walking beams rockably mounted on the axles, passenger carrying cars on said platforms mounted so as to be capable of tilting transversely of the platforms, and a mechanism under control of the operator in charge of the train of cars for governing the transverse tilting of the cars.

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